What is claimed is:

1. A method of fabricating microdevices from a workpiece, comprising:

a) illuminating a single column of microdevice cells on a mask with pulses of radiation; and

b) patterning the workpiece with images of the illuminated single column to form corresponding adjacent columnar exposure fields by continuously moving the substrate in the direction perpendicular to the long axis of the columnar exposure fields during illumination of the mask so that each columnar exposure field is formed by a single pulse of radiation.

2. The method according to claim 1, further including collecting with a projection lens the portion of the pulses of radiation transmitted by the single column of microdevice cells.

3. The method according to claim 2 including aligning the substrate relative to the image of the mask produced by the projection lens.

4. The method according to claim 1, wherein illuminating with pulses of radiation includes providing the radiation from a pulsed radiation source or a modulated continuous-wave radiation source.

5. The method according to claim 2, wherein the mask has a width and the single column of microdevice cells has a width that is 10% or less than the mask width.

6. The method according to claim 1, wherein the mask contains a single column of microdevice cells.

7. The method of claim 1, wherein the mask contains multiple columns of microdevice cells and including the step of adjusting the illumination to illuminate only a single column of microdevice cells.

8. The method of claim 7, further including adjusting an illumination field aperture to illuminate only a single column of microdevice cells.

9. The method according to claim 1, wherein each exposure field has a

width-to-length aspect ratio of between about 1:10 and 1:50.

10. The method according to claim 1, wherein the microdevice is a thin-film read/write head.

11. The method according to claim 1, further including forming multiple rows of columnar exposure fields by moving the workpiece over a scan path that includes stepping the workpiece in a direction parallel to the direction of a columnar exposure field by at least a columnar exposure field length.

12. The method according to claim 1, wherein the microdevice cells each include an electrical test structure to assist in controlling a lapping operation.

13. The method according to claim 12, wherein the microdevice is a thin-film head with a throat, and including performing the lapping operation so as to define a length of the throat.

14. A method of patterning a workpiece using a lithographic system to form microdevices in a manner that reduces colinearity effects, comprising:

supporting a mask having at least one column of microdevice cells formed thereon;

illuminating one of the at least one column with pulses of radiation; and

collecting the radiation transmitted by illuminated column with a projection lens and exposing a single columnar exposure field with each pulse of radiation as the workpiece moves continuously moving the workpiece over a scan path normal to the column direction so as to form a row of adjacent single columnar exposure fields.

15. The method of claim 14, wherein each single columnar exposure field is formed by a projection lens, the single columnar exposure field having a width of about 10 % or less than the maximum field width capability of the projection lens.

16. The method according to claim 14, wherein the at least one column has a width-to-length aspect ratio in the range from about 1:10 to about 1:50.

17. The method of claim 14, wherein the mask contains multiple columns of

microdevice cells, and including the step of adjusting the illumination to illuminate only a single column of microdevices.

18. The method according to claim 14., wherein adjusting the illumination is achieved by adjusting an illumination field stop.

19. The method according to claim 14, wherein adjusting the illumination is achieved by adjusting illumination system elements that concentrate the illumination into the desired long, narrow area occupied by a single column of devices.

20. A method of patterning a workpiece using a lithographic system in forming microdevices in a manner that reduces colinearity effects, comprising:

supporting a mask having at least one column of microdevice cells formed thereon;

illuminating one of the at least one column with pulses of radiation;

collecting the radiation transmitted by the illuminated column with a projection lens and forming a single columnar exposure field with one or more pulses of radiation; and

forming a row of adjacent single columnar exposure fields by stepping the workpiece by a width of a microcircuit device pattern between exposures.

21. The method according to claim 20, including providing the pulses of radiation in bursts of two or more pulses, and stepping the workpiece between bursts.

22. The method according to claim 20, wherein the mask has a width and the single column of microdevice cells has a width that is about 10% or less of the mask width.

23. The method according to claim 20, further including slicing the workpiece to form row-bars of microdevice units that contain a single device from many successive columns.

24. A system for patterning a workpiece to form microdevices in a manner that reduces colinearity effects, comprising:

a) a radiation source for providing pulses of radiation;

b) a radiation source controller in operation communication with said radiation source for controlling the emission of the radiation pulses from said radiation source;

c) an illuminator arranged to receive pulses of radiation from said radiation source and illuminate a single column of microdevice cells on a mask;

d) a projection lens arranged to receive pulses of radiation passing through the mask and adapted to form a columnar exposure field of microdevice units that corresponds to the column of microdevice cells on the mask;

e) a workpiece stage capable of supporting the workpiece and moving the workpiece over a scan path relative to the projection lens and in a direction normal to the projected direction of the column on the workpiece; and

f) a workpiece stage position control unit in operable communication with said workpiece stage and in communication with the radiation source control unit, wherein said workpiece stage position control unit controls the movement of said workpiece stage over said scan path such that a single pulse of radiation forms a single columnar exposure field, with temporally adjacent radiation pulses forming adjacent columnar exposure fields.

25. The system according to claim 24, wherein the illuminator has an associated illumination field, and the width of the column of microdevice cells is about 10% or less than the length of the column.

26. The system according to claim 24, wherein the workpiece stage includes a magnetically levitated stage.

27. The system according to claim 24, wherein the workpiece stage includes an air bearing stage.

28. The system according to claim 24, further including a pulse stabilization system arranged downstream of said radiation source.